REMARKS

Applicant respectfully requests that the foregoing amendments be made prior to examination of the present application, and respectfully requests reconsideration of the present application in view of the foregoing amendments and the reasons that follow. This amendment adds, changes and/or deletes claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, with an appropriate defined status identifier. Claim 147 has been cancelled, and claims 1-146 remain the case. These include claims previously indicated as withdrawn, some of which are currently amended.

Claims 1, 11, 12, 14, 16, 17, 49, 50, 60, 61 and 80 were rejected under 35 USC §112, first paragraph as failing to comply with the written description requirement. The examiner indicates that the negative limitation that the first component is "not an amino-substituted perylene" is not supported, but that a negative limitation "not a diarylamino-, arylalkylamino-, or dialkylamino-substituted perylene" is supported ("support is provided in the specification to exclude specifically diarylamino-, arylalkylamino-, or dialkylamino substitutents"). Applicants therefore are amending claim 1 to the scope indicated as supported by the examiner. Claims previously indicated as withdrawn have been amended in corresponding fashion. The examiner further indicates that the recitation "and wherein the host does not product light" is not supported. Applicants have now amended claim 1 to recite "wherein the host transfers electronic excitation energy to the dopant and the dopant emits light." This recitation is supported by the disclosure at page 89, second full paragraph ("transfer of electronic excitation energy to the luminescent dopant") and at page 91, first full paragraph ("electronic excitation energy transfer from the first and second host components, resulting from the recombination of electrons and holes in the first and second host components, to the light-producing dopants"). Reconsideration and withdrawal of the rejection under the first paragraph of Section 112 is respectfully requested.

Claim 1 also has been amended to more positively recite the functions of the various components, as suggested by the examiner during a recent conversation. That is, instead of reciting that various components "are capable of" acting in certain ways, claim 1 now recites that the components act in the manner specified. For example, instead of reciting that the first component "is capable of transporting either electrons or holes or both," claim 1 now recites that the first component "transports either electrons or holes or both." Similarly, claim 1 now recites that the first

component forms both a monomer state and an aggregate state in said device, the aggregate state being either in a ground electronic state or in an excited electronic state, the ground electronic state and the excited electronic state having a different absorption or emission spectrum or both relative to the absorption or emission spectrum or both of the monomer state." As described on pages 6-8 and shown in the EL spectra in the figures, the first component produces both a monomer and an aggregate state, and the relative amounts of these varies with concentration, with the aggregate contribution to the overall EL increasing with increasing concentration of the first component.

Claim 1 has further been amended to indicate that electronic excitation energy is transferred from the host to the dopant. Claim 1 now specifies that the host as described in the present invention provides the function of transferring electronic excitation energy to the dopant. This feature is supported by the specification (please see page 88, lines 11-16, page 90, lines 14-20, see also page 8, lines 17-20, page 9, lines 21-23, and page 99, lines 11-17). This is the way in which host/dopant combinations work: the host transfers electronic excitation energy to the dopant. The dopant is primarily responsible for the emission of light.

Claim 147 was rejected under 35 USC 102(e) as being anticipated by Oh et al (US 2003/0118866). Claim 147 has been cancelled.

Claims 1, 11, 12, 14, 16, 17, 49, 50, 60, 61, 80, and 147 were rejected under 35 USC §102(b) as being anticipated by or, in the alternative under 35 USC §103(a) as obvious over Aziz *et al.* (US 6,392,250). Claims 1, 11, 12, 14, 16, 17, 49, 50, 60, 61, 80, and 147 were rejected under 35 USC §103(a) as being unpatentable over Aziz (US 6,392,250) in view of Fujita *et al.* (US 2003/0137241).

The perylene mentioned by Aziz *et al.* clearly is proposed as an emissive dopant and not as a host-component perylene set forth in claim 1. Since perylene is an emissive dopant in Aziz *et al.*, it is clear that it is not advantageous to let it aggregate because it is well known that this would drastically reduce its luminescence and change its color. Therefore, the perylene dopant of Aziz *et al.* and the first component perylene of the present invention have different functions, and this is emphasized by applicant's recitation that perylene produces aggregates in the device. Aziz *et al.* teaches away from perylene as a host material, and more particularly it teaches away from aggregate perylene in an EL device as recited in applicant's claims.

Furthermore, one skilled in the art would understand that Aziz *et al.* clearly intends to use various dopants one at a time, using perylene as an emissive dopant for a blue OLED and, DCJTB as an emissive dopant for a red OLED. We will assume, for the sake of argument that the Examiner is correct and Aziz *et al.* '250 might be considered to disclose a very large number of possible mixtures of two dopants (in the concentrations from 0.05 to 10%) in the same light emitting layer via the use of the "at least" and "the like" language. One of these mixtures could indeed be perylene+DCJTB.

But a possible combination of two materials from the dopant list in Aziz in one light-emitting layer (LEL) is insufficient to anticipate or suggest the present invention. Where one of ordinary skill would have to choose judiciously from among a genus of possible combinations in the reference to arrive at the claimed invention, anticipation is not found. In compound claims, when a compound is not specifically named, but instead it is necessary to select portions of teachings within a reference and combine them, *e.g.*, select various substituents from a list of alternatives given for placement at specific sites on a generic chemical formula to arrive at a specific composition, anticipation can only be found if the classes of substituents are sufficiently limited or well delineated. *Ex parte A*, 17 USPQ2d 1716 (Bd. Pat. App. & Inter. 1990), as cited in MPEP §2131.02. The same holds true when one must select two different compounds from a list of compounds in order to arrive at a specific combination. No anticipation can be said to exist.

Moreover, there is nothing to suggest the particular combination urged by the examiner from among those possible in Aziz *et al.*, and hence there also is no *prima facie* case of obviousness. The dopant list is extensive, covering more than 20 classes of materials with their derivatives. All together, it includes hundreds of compounds, and therefore roughly up to 100;000 combinations of any two. If you count only the classes, it is 190 combinations. Would they all be useful? No, by any means they would not. Would the useful ones be obvious to one skilled in the art? Clearly, no. The knowledge of the useful ones can only be derived in hindsight using applicant's teaching. It is quite unobvious then, to tell which mixtures would be useful because very few would be and needless to say, it is impossible to predict which mixtures would result in the extension of the device operating lifetime.

The present invention teaches a combination that produces an unexpected extension of lifetime, for example, from 1,300 h to 2,000, 2,300, and 3,000 h (p. 133, example 41) at 9, 17, and 23% of perylene, respectively. Moreover, at the same time the device efficiency is also increased

46, 92, and 123%, respectively, and the emission color is significantly improved. It has not been shown before that perylene is capable of extending operating lifetime when used as a first host component of the present invention. The Aziz *et al.* disclosure does not teach and would not have made obvious the particular combination presently claimed which is useful for extending device lifetime.

Fujita *et al.* (US2003/0137241) is added to Aziz *et al.* as a secondary reference to reject claims 1, 11, 12, 14, 16, 17, 49, 50, 60, 61, and 80 under 35 USC 103(a). Aziz *et al.* has been discussed above. Fujita *et al.* does not overcome the failure of Aziz *et al.* to suggest the combination recited in claim 1. Fujita *et al.* focuses on synthesis of perylenes, more specifically, mostly periflanthenes which are red emitters. These materials are used in an EL device (page 129, col. 1, example 4) which uses rubrene as a host and a periflanthene as a dopant, and does not involve either Alq or DCJTB. There is nothing in Fujita *et al.* that would suggest the use of the component in element (d)(i) of claim 1.

Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested. The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application. If there are any problems with this response, Applicant's attorney would appreciate a telephone call.

Respectfully submitted,

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DATE

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